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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,933	08/28/2003	Seo-Hyun Cho	1349.1280	6101

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EXAMINER

VO, ANH T N

ART UNIT	PAPER NUMBER
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2861

DATE MAILED: 09/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/649,933	CHO ET AL.	
	Examiner	Art Unit	
	Anh T.N. Vo	2861	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 July 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## FINAL REJECTION

### *Claims Rejections*

#### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claims 1-4 and 15-24 remain rejected under 35 USC 102 (e) as being anticipated by Kim et al. (US Pat. 6,623,092).

Kim et al. disclose in Figures 2-3 an ink cartridge comprising:

- at least one first chamber (160) storing an ink;
- at least one second chamber (120) having an air inflow hole (124) formed at an upper portion thereof to be exposed to an ambient air and an ink supply portion (132) formed at a lower portion thereof and having an ink supply port supplying an ink, the second chamber containing with a negative pressure generating medium (122) storing the ink;
- an intermediate partition (110) having a connecting hole (112) defined in a lower portion thereof, connecting the first and the second chambers (160, 120) to each other, the intermediate partition (110) dividing the first and the second chambers (160, 120);

Art Unit: 2861

- wherein a first volume (an unmarked volume containing an element 122) is larger than a second volume (an unmarked volume containing an element 172), the first volume being defined by a first face forming an ink contact surface of the negative pressure generating medium (122) adjacent the connection hole, a second face forming a bottom surface of the intermediate partition in the connecting hole, a third face forming a bottom of the ink cartridge (100), and a first vertical plane extending vertically from a center plane of the intermediate partition and the second volume being defined by the first vertical plane, the second face, the third face, and a second vertical plane extending vertically from a wall of the intermediate partition facing the first chamber (160), preventing the connecting hole (112) from being blocked with the negative pressure generating medium (122) expanding in the second chamber (120);
- wherein the third face comprises an inclined surface (an unmarked inclined surface is at bottom wall of an chamber 120) extending toward the ink supply portion (132) from a position, which is separated by a predetermined distance from a third vertical plane vertically extending from a second wall of the intermediate partition facing the second chamber by a predetermined distance, the inclined surface being inclined at a predetermined obtuse angle with respect to a horizontal surface;
- wherein the position is in the second chamber (120);
- wherein a lower surface of the negative pressure generating medium (122) to expand in the second chamber (120) adjacent to the intermediate partition (110) is inclined at an angle corresponding to the angle of the inclined surface before the negative pressure generating medium expands in the second chamber, thereby preventing the negative pressure generating medium from being compressed and expanding in a substantially triangular space defined by an extended plane from the inclined surface of the third face, a non-inclined surface of the third face, and the third vertical plane as the negative pressure generating medium expands in the second chamber;
- wherein the obtuse angle of the inclined surface is measured from a non-inclined portion of the third face;
- wherein a lower surface of the negative pressure generating medium (122) to expand in the second chamber (120) adjacent to the intermediate partition (110) is inclined at an angle corresponding to the angle of the inclined surface before the negative pressure generating

Art Unit: 2861

medium expands (122) in the second chamber (120), thereby preventing the negative pressure generating medium from expanding in a substantially triangular space formed by the inclined surface of the third face, an extended plane from a non-inclined surface of the third face, and the third vertical plane;

- wherein the third face (an unmarked bottom wall of a chamber 160) comprises a horizontal surface portion parallel to the horizontal plane.
- the ink cartridge comprising magenta, cyan, and yellow ink chambers (Fig. 2);
- wherein the medium chamber (120) contains a negative pressure generating medium (122) including a porous material, wherein the porous material is foam to store ink;
- a filter (130) on a stand pipe between the medium (122) and the ink supply port (132) to guide a flow of the ink;
- wherein a portion of the base of the ink cartridge (100) in the medium chamber side (120) is inclined at an angle between 90 and 180 degrees from a non-inclined portion of the base toward the ink supply portion (132) (Fig. 3); and
- wherein the inclined portion prevents air bubbles from horizontally moving toward the ink supply port (132); and
- wherein a lower surface of the medium (122) has an inclined angle substantially corresponding to the angle of the inclined surface.

Claims 1, 15-16 and 36 remain rejected under 35 USC 102 (e) as being anticipated by Iwanaga et al. (Pub. No. US 2002/0012033).

Iwanaga et al. disclose in Figures 4A-4B, 7B, and 9B-11 an ink jet printer comprising:

- at least one first chamber ((36) storing an ink;
- at least one second chamber (an unmarked chamber containing an element 32) having an air inflow hole (12) formed at an upper portion thereof to be exposed to an ambient air and an ink supply portion (14) formed at a lower portion thereof and having an ink supply port supplying an ink, the second chamber containing with a negative pressure generating medium (32) storing the ink;

Art Unit: 2861

- an intermediate partition (38) having a connecting hole (40) defined in a lower portion thereof, connecting the first and the second chambers to each other, the intermediate partition (38) dividing the first and the second chambers;
- wherein a first volume (an unmarked volume containing elements 32, 34) is larger than a second volume (an unmarked volume containing ink), the first volume being defined by a first face forming an ink contact surface of the negative pressure generating medium (32) adjacent the connection hole (40), a second face forming a bottom surface of the intermediate partition in the connecting hole, a third face forming a bottom of the ink cartridge (10), and a first vertical plane extending vertically from a center plane of the intermediate partition and the second volume being defined by the first vertical plane, the second face, the third face, and a second vertical plane extending vertically from a wall of the intermediate partition facing the first chamber (36), preventing the connecting hole (40) from being blocked with the negative pressure generating medium (32) expanding in the second chamber;
- the ink cartridge comprising magenta, cyan, and yellow ink chambers (Fig. 11); and
- a connection hole blockage preventing structure including a protruding guide (63 or 65) protruding toward the medium chamber, and a cut out portion formed at a corner of the medium (32) corresponding to a portion of the protruding guide (61 or 63) (Figs. 4B and 7B).

***Claim Rejections - 35 U.S.C. § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2861

Claims 5-14 and 25-35 remain rejected under 35 U.S.C. 103 (a) as being unpatentable over Kim et al. (US Pat. 6,623,092) in view of Tsukuda (US Pat. 6,234,615) and further in view of Jones et al. (US Pat. 6,682,183).

Sato et al. disclose the basic features of the claimed invention were stated above but do not disclose a corner of the lower surface of the negative pressure generating medium has a cut out portion formed in a rounded shape and/or an inclined shape and/or a stepped shape, thereby preventing the negative pressure generating medium from being compressed and expanding in the connecting hole and the position is disposed at a side of the first ink chamber.

Tsukuda discloses in Figure 1 an ink supply system comprising an ink tank (8B) having a corner of the lower surface of the negative pressure generating medium (32) has a cut out portion formed in a rounded shape, thereby preventing the negative pressure generating medium (32) from being compressed and expanding in the connecting hole (30T).

Jones et al. disclose in Figures 1-2 an ink cartridge (10) comprising the position is disposed at a side of the first ink chamber (14a).

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to incorporate the teaching of Tsukuda and Jones et al. in the Kim et al. ink cartridge for the purpose of preventing an ink absorbing foam expanding into communicating hole so that ink from an ink chamber that can easily flow into an ink absorbing foam chamber.

Kim et al. in view of Tsukuda and further in view of Jones et al. disclose the claimed invention except for "the negative pressure generating medium has a cut out portion formed in an inclined shape and/or a stepped shape,". It would have been obvious to one having ordinary skill in the art at the time the invention was made to select changes in the shape of the negative pressure generating medium for the purpose of preventing the negative pressure generating medium expanding into the communicating hole so that ink from an ink chamber that can easily flow into an ink absorbing foam chamber. Since it is a mechanical design expedient for an

engineer depending upon a particular environment and the applications in which the ink jet cartridge is to be used. In re Daily, 357 F.2d 669, 149 USPQ 47 (CCPA 1966). See MPEP 2144.04.

***Response to Applicant's Arguments***

The applicant argues that Kim does not suggest the claimed first volume because the ink contact surface of the sponge 122 does not contact the bottom of the ink cartridge 100. The argument is not persuasive because there is nothing recited in the rejected claims about the contact between the surface of the sponge and the bottom of the ink cartridge. Moreover, since the ink cartridge of Kim has the structure similar to the structure of the claimed cartridge, the first volume of Kim must anticipate the claimed first volume.

The applicant argues that Iwanaga et al does not suggest the claimed first volume because the partition wall (38) extends all the way to the bottom of the cartridge and the absorber (32) is flush against the inner surface of the partition wall (38) and the first volume is not larger than the second volume. The arguments are not persuasive because there is nothing recited in the rejected claims about the contact of the surface of the sponge and the extension of the partition wall. Moreover, since the ink cartridge of Iwanaga et al has the structure similar to the structure of the claimed cartridge, the first volume of Iwanaga et al must anticipate the claimed first volume. Also, Figure 10A of Iwanaga et al shows that the first volume is larger than the second volume.

***CONCLUSION***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37



Art Unit: 2861

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Anh Vo whose telephone number is (571) 272-2262.

The examiner can normally be reached on Tuesday to Friday from 9:00 A.M. to 7:00 P.M..

The fax number of this Group 2861 is (571) 273-8300.



**ANH T.N. VO**  
**PRIMARY EXAMINER**  
September 15, 2005